



Innovative manure scraper systems

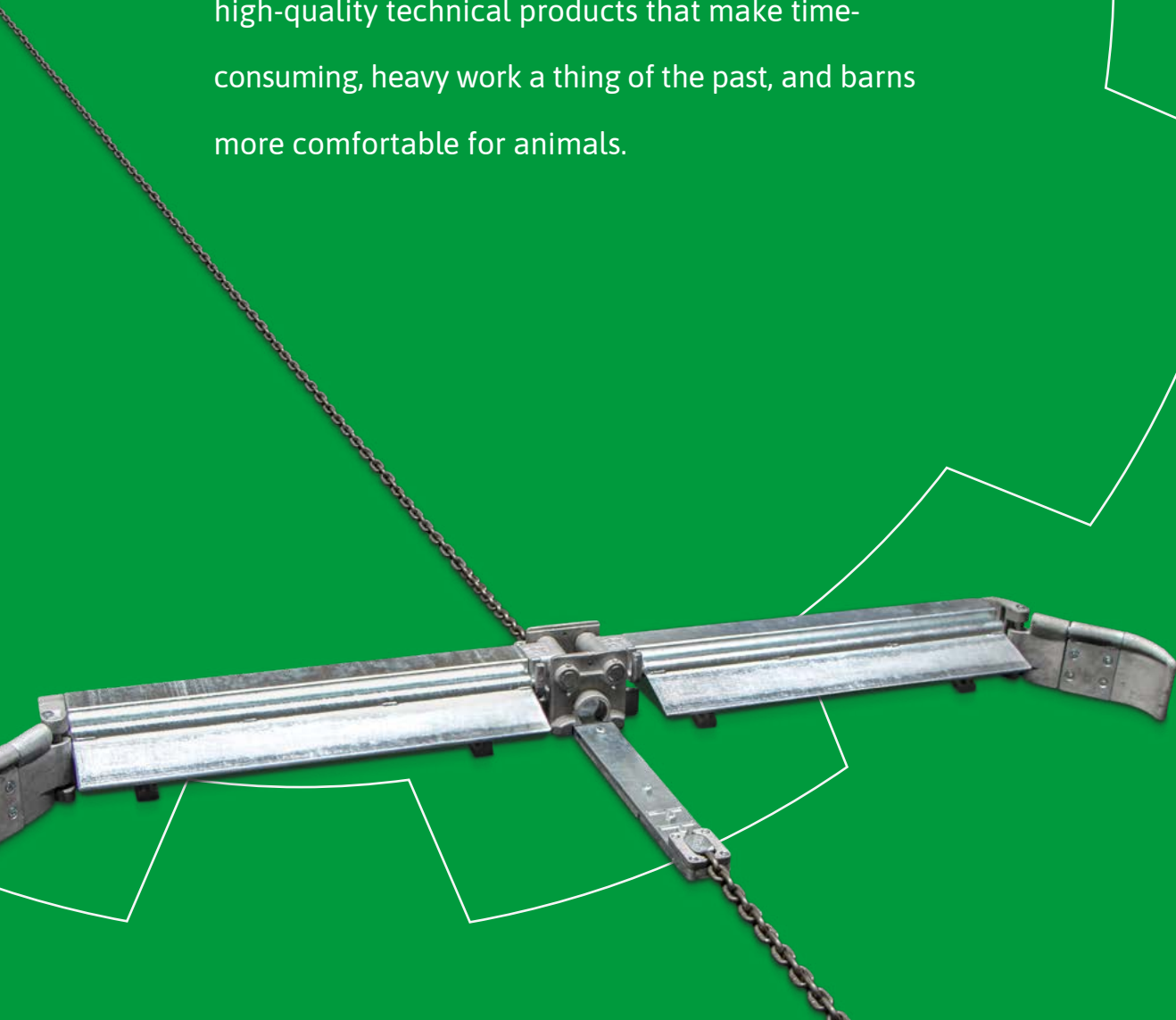
Meet JOZ's manure scrapers

Manure scrapers



Home of the clean stable

Dairy farmers' lives can be made easier and more profitable. It is important that animals feel comfortable in the barn. We manufacture high-quality technical products that make time-consuming, heavy work a thing of the past, and barns more comfortable for animals.



Made in Holland

www.joz.nl

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For every type of barn

Drive units

JOZ supplies manure scrapers that are moved by rope, countersunk steel cables, stainless-steel cables or steel chains. JOZ scraper systems can be used on slatted floors, solid concrete floors, rubber floors, and low-emission floors.

Advantages

- ✓ Easy to maintain
- ✓ Increased service life due to heavy-duty construction
- ✓ Automatic tensioning possible
- ✓ Turned off by position measurement, not by extreme resistance



Drum drive mechanism – rope & cable

The drum drive consists of a narrow, large-diameter drum that can be used in combination with rope, plastic-coated cables or stainless-steel cables. A drum-drive system always requires two drive units.

While one drive unit rolls up the rope, the other unit unrolls it. The system does not then need to be under tension. The narrow drum and the guide ensure that the rope or cable is always perfectly wound.

The drum drive can be set up on the floor (beyond the reach of the cows) or on a console installed inside or outside the barn. Thanks to the large

diameter and the robust, powerful gear motor (0.75 kW), the drive is ideal for barns with long alleys and very intensive use.

The drum drive can be used in conjunction with JOZ lifting hatches (type 650). A steel cable can be installed between the manure scrapers if needed.

The top surround of the drive unit is made of a combination of stainless steel and plastic. The front and back are easy to install or uninstall, so any maintenance required is easy to perform.

Operation of JOZ drive units

Drive units are operated by JOZ's MSC control panel.

This control panel is unique because it communicates with a precision sensor on the drive motor. This allows the control panel to know where the manure scraper is on the floor at all times. The system can even be equipped with frost protection and a remote control.

See page 22 for more information on all the advantages of JOZ's control technology.





Applications



Type of floor

- ✓ Slatted floor
- ✓ Solid concrete floor
- ✓ Rubber floor
- ✓ Low-emission floor



Manure alley length

- ✓ Plastic-coated cable (8 mm, max. 120 metres)
- ✓ Plastic-coated cable (10 mm, max. 100 metres)
- ✓ Dyneema rope (10 mm, max. 100 metres)
- ✓ Stainless-steel cable (8 mm, max. 120 metres)
- ✓ Stainless-steel cable (10 mm, max. 100 metres)



Advantages



Stainless steel cable

- ✓ Unaffected by manure
- ✓ Premium quality
- ✓ Can be used in combination with discharge hatches
- ✓ Smooth/abrasion resistant - cow-friendly



Plastic-coated cable

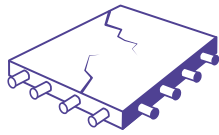
- ✓ Long alley length is possible
- ✓ No pieces of steel wire in manure
- ✓ Prevents injury to claws and hooves



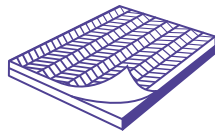
Rope

- ✓ Animal-friendly
- ✓ Easy to repair
- ✓ Extremely strong
- ✓ Dyneema rope





Solid concrete floor



Rubber floor



Low-emission floor

Drive Unit XL

Invest in the future and choose Drive Unit XL. A solidly built drive unit with easy access for carrying out maintenance work.

Drive Unit XL comes with a Corner Wheel XL. The large diameter of 40 cm, hardened parts and self-lubricating capability mean that Corner Wheel XL can withstand the toughest barn environments and bedding materials.

Lubrication is no longer necessary, which makes this another cleverly developed JOZ product, like the Vario Sprocket.



Drive Unit XL is characterised by:

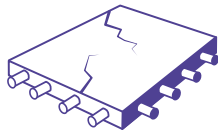
- ✓ Heavier motor footplate
- ✓ Heavier inner sleeve
- ✓ Improved power distribution motor/drive unit
- ✓ Always hydraulic
- ✓ Suitable for 0.75 and 1.5 kW and for Dual Drive.
- ✓ Hinged chain guards to facilitate maintenance

If necessary, a traditional tensioning jack can be used.

Corner Wheel XL features:

- ✓ Can be mounted horizontally or vertically
- ✓ Not suitable for rope/cable
- ✓ Very long service life
- ✓ The corner wheel does not rotate over the bottom of the corner roll
- ✓ Lubrication is no longer necessary, practically maintenance-free!

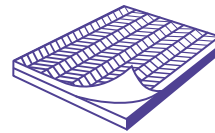
A unique solution from JOZ, in combination with the Vario Sprocket, automatic tensioner and Drive Station XL.



Solid concrete floor



Slatted floor



Rubber floor



Low-emission floor

Chain drive

JOZ chain scraper systems use one drive unit per system. A chain installation is suitable for one or two manure alleys and, depending on the situation, one or more scrapers can be used per manure alley.

The capacity of the drive is determined by the length of the barn, with the option of a 0.55 kW, 0.75 kW or a 1.5 kW motor gear unit. The quiet motor gear units are of heavy-duty quality for a long service life and feature a direct drive without belts. The drive is placed on a

vertical console that is fitted with protective surrounds on the telescopic part of the drive unit. The top cover is stainless steel and the chain guards are hot-dip galvanized. The front and rear are easy to assemble and disassemble.

A brace kit is included with the 1.5 kW system for extremely resilient attachment to the floor. This brace kit is optionally available for the 0.55-kW and 0.75-kW units, and can also be used with existing drives.



Drive motor application and maximum chain length:*

0.55 kW	max. 120 metres
0.75 kW	max. 240 metres
1.5 kW	max. 350 metres

* Maximum alley length 160 metres. Check the Dual Drive for even longer alley lengths, see page 10.

Fully automatic hydraulic tension

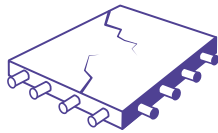
Instead of manually tensioning the chain with the standard tensioning jack or crank, an automatic tensioner is available as an option. This saves money on both maintenance and labour, because you don't have to shorten an extra chain when changing the chain sprockets or tension it manually. In addition, this tensioner reduces maintenance costs. The system is always correctly tensioned, which reduces wear. It is also reliable, because you will never tension it too late.



Advantages of chain system

- ✓ Optional automatic tensioning system with extra-long tension length saves time
- ✓ Motor gear units installed on a vertical console, to be mounted between the cows or outside
- ✓ Unequal alley lengths are no problem
- ✓ Combination of chain over the drive and cable on the rear possible
- ✓ If several scrapers are used in each manure alley, a drawbar can be installed between the scrapers
- ✓ Maintenance when it suits you, no nasty surprises due to cable, rope or chain breakage

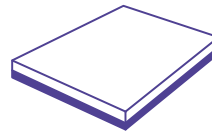
Maximum hygiene,
healthy cows and optimal
safety with vertical
protective surrounds



Solid concrete floor



Flat floor



Asphalt floor

Dual Drive

More than a thousand metres with just one system!
As livestock farms around the world continue to grow in size, barns too are getting bigger. JOZ developed the Dual Drive in order to offer a suitable solution for these larger farms, where cow safety remains the priority. The Dual Drive allows systems of up to 1,000 metres long!

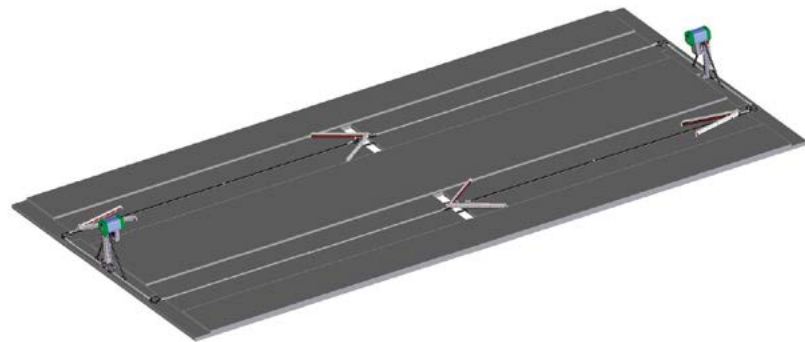
More than a thousand metres with just one system!

This system is fitted with two drive units, which means that the installation is controlled by two motors and the forces are evenly distributed. This prevents extra wear and tear, and increases safety for cows. Because of the equally distributed forces, we are able to use our standard JOZ parts.

The Dual Drive system can be equipped with 2 x 0.75 kW or 2 x 1.5 kW motors, depending on the length of the alleys. The system is controlled by an MSC control panel and a Dual Drive PCU (power control unit). Two Dual Drive systems can be operated with a single MSC.

JOZ recommends using a fully automatic hydraulic tensioner with the Dual Drive system. The system is always correctly tensioned, which reduces wear.

To further improve the ROI of the conventional systems, the special combination of a Dual Drive with Vario Sprocket and Corner Roll Plus is available. This combination increases the lifespan of the entire installation. It results in less tensioning and shortening of the chain, which further improves ease of use.



Characteristics

- ✓ More than 1,000 metres with a single system
- ✓ Force evenly distributed over the installation
- ✓ Very safe for cows
- ✓ Easy to maintain

Vario Sprocket

JOZ has developed a unique solution for the uneven wear of the chain: the Vario Sprocket with long-tempered chain. This sprocket can change its pitch



and adapt to the varying pitch of the chain. The teeth are attached using a spring structure which distributes forces evenly over the Vario Sprocket. This ensures less wear and maintenance. The drive sprockets no longer need to be replaced and the sprocket only when the chain needs replacement. The Vario Sprocket can only be used in combination with the JOZ long-tempered chain (13 x 65). Made for heavy-duty work, this chain has a maximum breaking force of 20,000 kilos. The new sprocket including long-tempered chain can be mounted on existing installations.

Corner Roll Plus

This new corner roll with hardened components is ideal for sand barns or tough conditions. The Corner Roll Plus is always fitted to a Dual Drive system or a barn with more demanding conditions. All information on the Corner Roll Plus can be found on page 15.

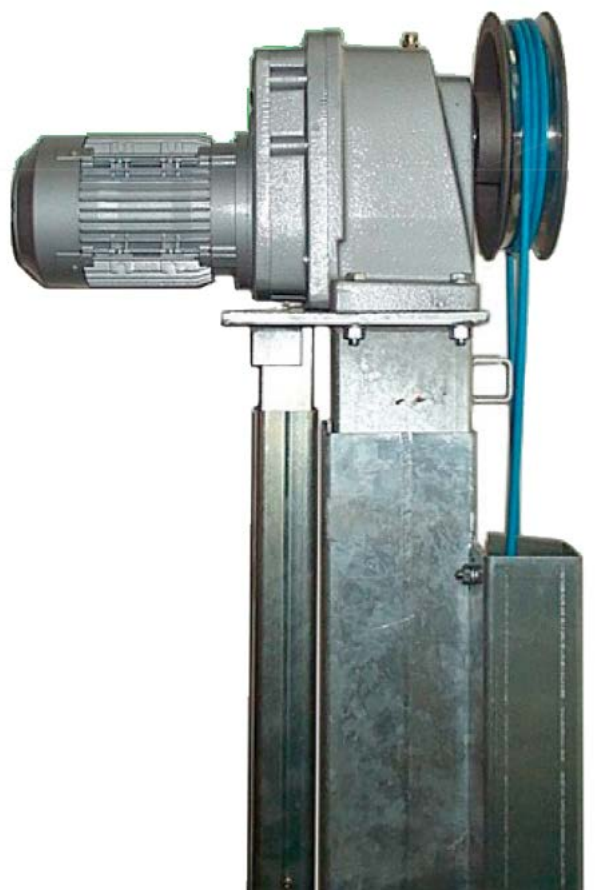




Slatted floor

Cable drive mechanism

In addition to the drum drive (rope/cable) and the chain drive, JOZ also supplies a cable scraper system that is propelled by plastic-coated steel cable. The cable scraper installation is fitted with one drive unit per system, which pulls the cable back and forth. The system is driven by a drive roller. The cable drive is operated by JOZ's MSC control panel. Read more about JOZ's control solutions on page 22.

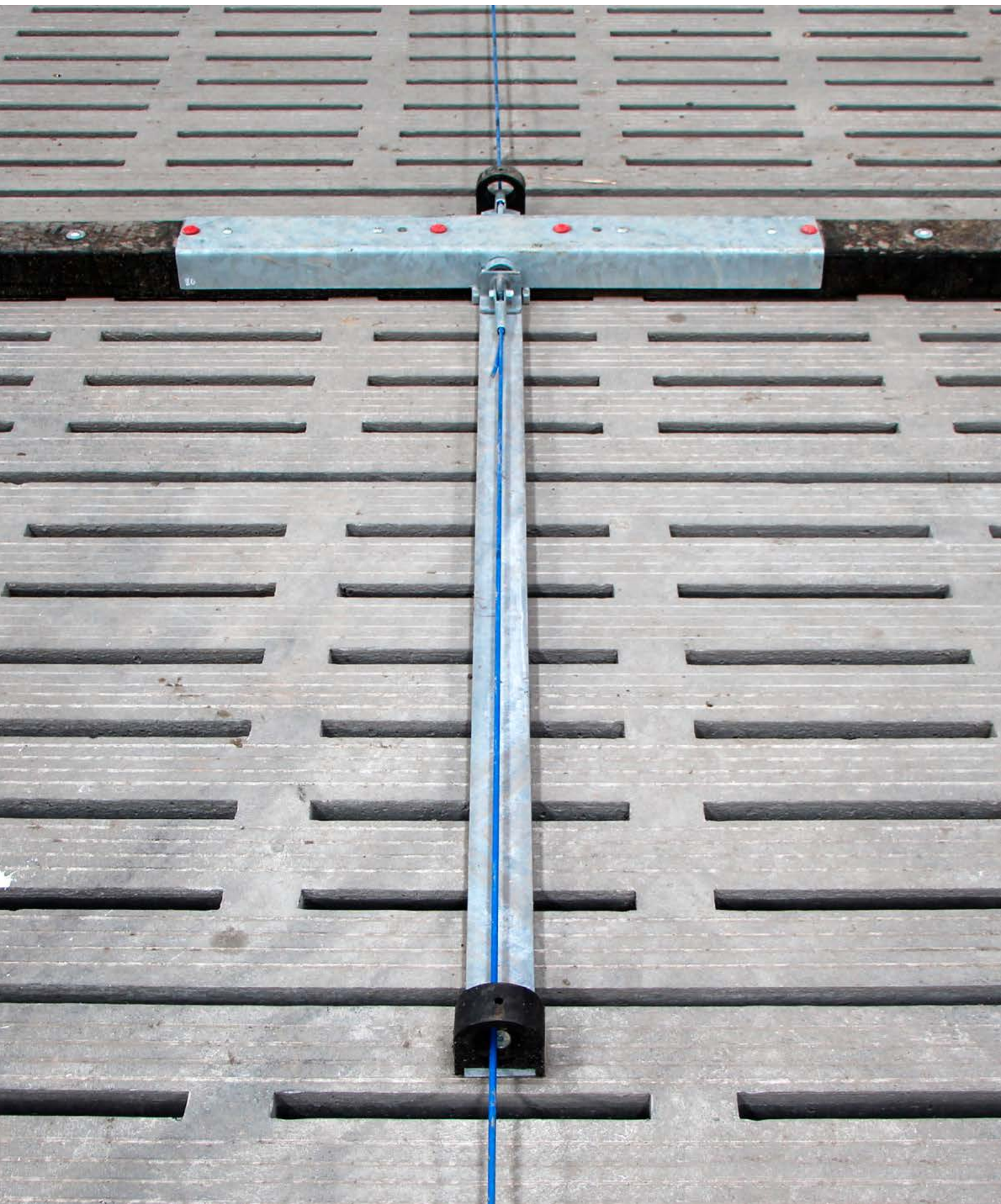


Type of drive motor and max. length of cable:*

0.55 kW

max. 100 metres

**Drives for
any type of barn**





Drive units

Accessories

JOZ has developed special products that extend the service life of drive units.

Advantages

- ✓ Cow-friendly corner rollers
- ✓ Long service life
- ✓ JOZ is here to help



Corner rolls

Standard corner roll



The corner rolls can be used on slatted floors, solid concrete floors, rubber floors, and low-emission floors.

Cow welfare was taken into account in the construction of the thick-walled corner roll. For example, JOZ has fully integrated the greasing nipple of the corner roll so that the claws of the cows' hooves cannot become damaged. The large diameter and the hardened axle ensure that the fully hot-dip galvanised corner roll has a long lifespan.

A special 180-degree corner roll is available for a single alley with chain. Is there a rope or cable running tightly along the wall? We have a corner roll for that too.



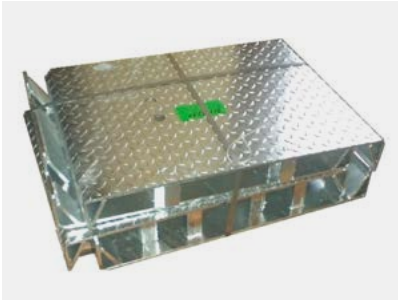
Corner Roll Plus

This new corner roll with hardened components is ideal for sand barns or tough conditions. The Corner Roll Plus is equipped with a wear-resistant shaft and the corner roller is fitted with a wear-resistant sleeve. The shaft is characterised by its droplet-shaped design. A very durable construction that can be installed in existing installations.



Corner roll cover

Cow-friendliness is a high priority for JOZ. To make the robust corner rolls as claw-friendly as possible, we offer protection in the form of a rubber mat. The profile at the top of the rubber makes it easier for cows to grip.

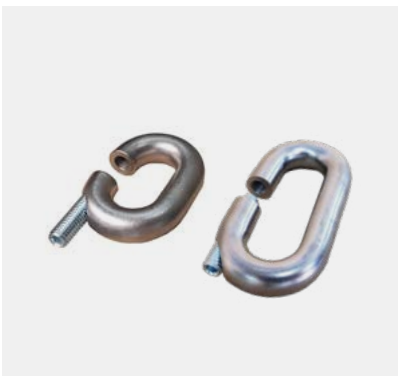


In addition to the rubber cover, a lid can be mounted on top of the corner roll. It is also possible to drive over corner rolls covered with this lid. This has benefits in achieving MDV (Sustainable livestock farming) recognition.



Stand-alone compression spring

For drive units implemented as a grate installation, a compression spring which can be installed on the corner roll is supplied as standard. The compression spring forms the mechanical end point of the system. While 'learning', the MSC control panel measures the distance between the compression spring ends. When the system is in operation, the compression springs are no longer used because the unit stops at the correct distance. This ensures a longer service life for chain, rope or cable. For concrete mounting, we supply a stand-alone compression spring to achieve the same effect.



Connecting link

The new connecting link with Allen key socket is more durable than its predecessor. If the manure scraping system has to operate under more demanding conditions, or is fitted with lift hatches or a 1.5 kW gear motor, JOZ recommends using a welded link.

Use these products to extend the service life of the drive unit

Lift sockets



Special lift socket

With cable systems and combined cable/chain systems, a special lift socket must always be used. This allows the cable to be attached to the scraper and the cable and chain are connected.



Complete lift socket

The enclosed lift socket is used with cable systems. This lift socket allows the cable to be attached to the scraper and also ensures that the cable or rope is not pinched during attachment. This prevents premature fracture. A lift socket allows the cable or rope to be easily detached at any time for maintenance. These lift sockets are supplied as standard with the slatted floor scraper with cable.



Clamp bushing for cable

A clamp bushing with thimble is used for the 10 mm stainless-steel cable. The clamp bushing connects the cable securely to the manure scraper. The thimble keeps the cable in a loop, extending its service life. The clamp bushing is more cow-friendly than the lift sockets and is ideal for use with UNP profiles and the stand-alone compression spring.



Chain cleaner

We developed the chain cleaner to scrape sticky manure off the chain. If you use straw as box litter, the manure can get really sticky. The chain takes that sticky mass towards the drive wheel. If the manure accumulates there, the wheel loses grip and the scraper does not work properly. The chain cleaner prevents that. It keeps the drive wheel working properly *and* keeps the manure in the barn.

Tensioning the chain

The manure scraping system functions best when the chain tension is correct. It keeps the system running smoothly and a properly tensioned chain prevents unnecessary wear. The chain can be tensioned in several ways:

Standard JOZ manual tensioner

The chain can be correctly tensioned with the standard JOZ manual tensioner.



Heavy Duty JOZ manual tensioner

A stronger tensioner is required for heavy-duty systems. The Heavy Duty tensioner is supplied with a drive of at least 1.5 kW as standard.



Collet

The JOZ collet simplifies maintenance work, such as shortening the chain.



Chain tool

The chain tool removes kinks from the chain, making it last longer.



Fully automatic hydraulic tensioner

Instead of using the standard manual tensioner to tension the chain, an automatic tensioner is available as an option. It saves labour because you don't have to shorten the chain when changing the drive sprockets and you don't have to tighten it manually. It also reduces maintenance costs. The system is always correctly tensioned, which reduces wear. The automatic tensioner keeps the chain ideally tensioned at all times, so it is an extremely reliable solution.



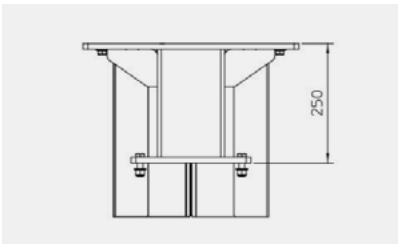


Drive unit brace kit

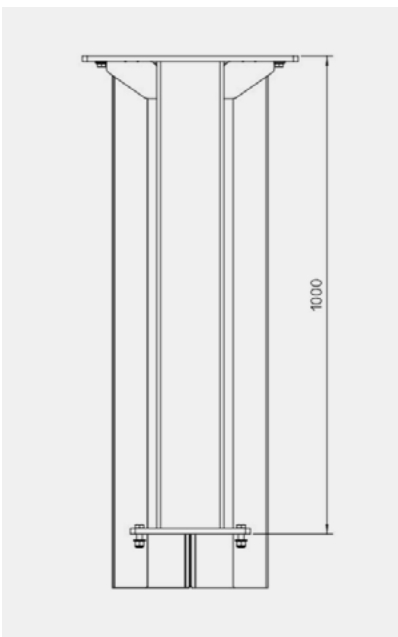
The brace kit provides additional reinforcement for the drive unit. The brace kit is used as standard with units of 1.5 kW or more. It is also used in cases of lesser concrete quality.

Console extensions

These extensions are used to raise the drive mechanisms on the drive unit. This may be required if the drive mechanisms have to be kept out of the reach of animals, or if the drive unit has to be placed in a pit or side drain (level differences).



The extensions are available in 4 different sizes and supplied as a complete set:



Product Description	Increase in height
Drive unit console extension 250	25 cm
Drive unit console extension 500	50 cm
Drive unit console extension 750	75 cm
Drive unit console extension 1000	100 cm

Important information

- JOZ recommends using the brace kit with every type of extension (more stability)
- The kit consists of the extension piece, two chain guards and accompanying mounting material
- Can be used with the new console model, not the old model



Curious about our farmers' stories?

joz.nl/en/farmers-stories



MSC control panel: precise communication

Control technology

JOZ's unique MSC control panel is distinguished by the precision sensor on the drive motor. This allows the control panel to know where the manure scraper is on the floor at all times.

Advantages

- ✓ Simple operation (three buttons for manual start, stop and reverse scraping)
- ✓ Unique cow protection for empty and full manure scraper
- ✓ Can be used with all JOZ drive units



Precision communication

The precision sensor on the drive motor allows the control panel to know where the manure scraper is on the floor at all times.

Various settings are possible and JOZ can adjust the manure scraper in detail as desired. The simple operation provides great convenience for the farmer and also makes it possible for a replacement to use the system.

The control panel is available with a frequency inverter (single phase - 230 V) or a power control unit (PCU) (3-phase - 380 V). The advantage of the frequency inverter is the stepless speed control when switching on and off, which increases the service life of the motor gear unit.

The advantage of the PCU is that it is insensitive to voltage drops. In addition, the system offers unique cow protection. The sensitivity of the cow guard can be adjusted electronically. There are also various inputs and outputs available to which the installer can fit a pump or spray system, for example. All in all, it makes JOZ's control technology unique in its kind!

Speed control

It is also possible to limit the speed at, for example, a gate or a letterbox deposit hatch. The speed can then be temporarily reduced to approx. 2 metres per minute. The speed of the entire scraping cycle can also be set between 4 and 6 metres per minute. The PCU works with pulses.

Remote control

The installation can be started or stopped remotely using the remote control.

The scraper or scrapers can be moved from the shovel when laying straw in the cubicles so that you don't have to wait for them.

Remote control application:

- 1 remote control per MSC
 - 2 drum drives per remote control
 - 2 cable/chain drives per remote control
- 150 metre range
- Start/stop function
- MSC automatically returns to auto mode



Manure scraper position

The control panel offers the option of setting the manure scrapers to a special position at adjustable times. This is useful if the scrapers are parked by default at the entrance to the waiting area or at the barn door leading to the pasture. When the cows have to be milked or allowed into the fields, the scraper can be automatically set to a position that does not obstruct the cows. The cycle counter - in other words, the distance travelled and the route still to be travelled - is also shown in the display. The duration of the switch-off delay is also visible on the screen.

When the combi or comb scraper is not moving, the main wings remain open. This isn't cow-friendly and cows can damage their hooves. The MSC control panel can set the main wings of the scraper to close in the stand-by position. The scraper will then

move slightly forward so that the main wing goes into the scraper position. It is also possible to park the scrapers in an adjustable position instead of by the corner rolls. If there is a lot of cow traffic near the corner rolls, JOZ recommends always setting a different parking position. In this position setting, the scraper first returns to the corner roll at the start of the scraper cycle so that the entire alley is always scraped.

Deposit

Depositing is even easier with the MSC control panel. When depositing waste from a single manure alley (in a single line installation), the deposit side can be chosen. An advantage of the MSC control panel is the phased movement or reduced speed when depositing in the middle or at the end of the manure alley. The slurry and manure then falls into the deposit opening in small amounts, avoiding its blockage or the blockage of the cross channel.

Specific zone

The MSC control panel allows you to divide the manure alley into specific zones. Cow protection can be set by zone. For example, the part of the barn that holds the dry cows cannot be scraped at night because of calving.



**Depositing is even easier
with the MSC control panel**



Maintenance & notifications

To keep working optimally, the manure scraper needs maintenance. The MSC control panel lets you know when periodic maintenance is needed. The interval can be adjusted by the technician. The system can detect breakage of the chain, cable or rope and report it on the display.

Automatic restart

The control panel is also equipped with an automatic restart function after a power cut. After power is restored, the installation performs an automatic restart. This restarts the scraping cycle and the manure alley is scraped clean again.

Frost protection (optional)

Frost protection is automatically enabled if the temperature drops below zero. The lower the temperature, the more often the scraper moves a small distance forwards and backwards. This prevents the installation from icing up.

If lifting hatches are fitted, it is also possible to scrape the entire alley during the frost protection movements to prevent them from icing up too.

JOZ data logger

When scraping manure on a low-emission floor, the connection of a JOZ data logger to the MSC control panel is compulsory. The Dutch government requires



livestock farmers to clean the entire manure alleys of low-emission floors every 1.5 to 2 hours. This does depend on the type of floor. You are also obliged as a livestock farmer to prove that you have done this for the past three months. The JOZ data logger registers the scraping movements in a log file, which can be easily read via a USB stick (as an Excel file).

Advantages of JOZ's MSC control panel

The control panel is unique, and not just because of the speed limiter, the remote control and all the other facets mentioned. It also has:

- ✓ The option of linking an external emergency stop or other signals
- ✓ The option to connect the slurry removal systems in the deposit area to create a fully automatic system
- ✓ Power start after laying straw in the cubicles



At JOZ, the well-being of your cows is paramount



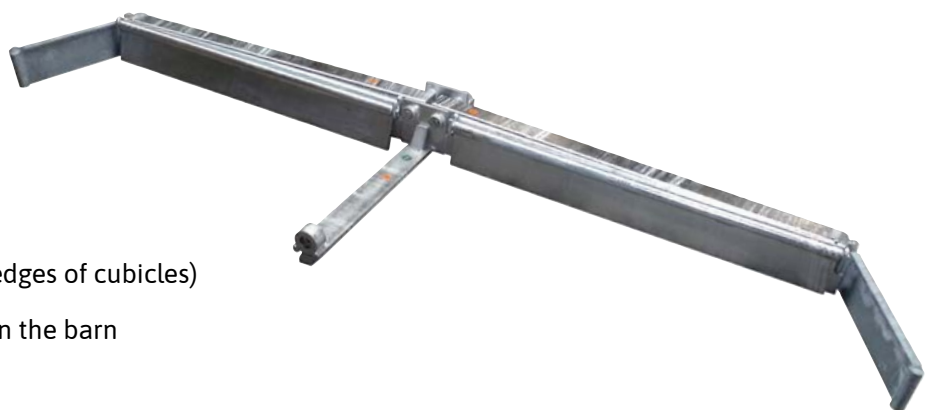
Optimal hygiene in the barn

Manure scrapers

JOZ develops and supplies high-tech manure scrapers for every type of barn and cubicle bedding.

Advantages

- ✓ Clean environment, cleaner cows
- ✓ Fewer hoof problems
- ✓ Fewer bacteria (especially at the edges of cubicles)
- ✓ Improvement of general hygiene in the barn



Cleaner floor, healthier cows

Cow comfort is an important economic parameter in dairy farming. Comfort for your cows, animal well-being and hygiene are all inextricably linked. They influence each other and JOZ takes each of these aspects into account for every solution.

Healthy legs and hooves are the basis for proper cow performance and a longer life. Hoof disorders are related to nutrition, hygiene and the environment in the barn.

Infectious hoof diseases, such as digital dermatitis, interdigital dermatitis and foot rot are caused by bacteria that occur in cattle manure. Lameness causes a lot of damage on cattle farms. This damage can be broken down into direct economic damage (costs of treatment and non-delivery of milk from sick or treated cows) and indirect damage (lower milk production, decreased fertility and early disposal).

Good hoof health contributes to animal welfare and makes farm work easier.

JOZ takes these aspects into account and uses the principle of clean and dry hooves as basis for selection of the right manure scraper.

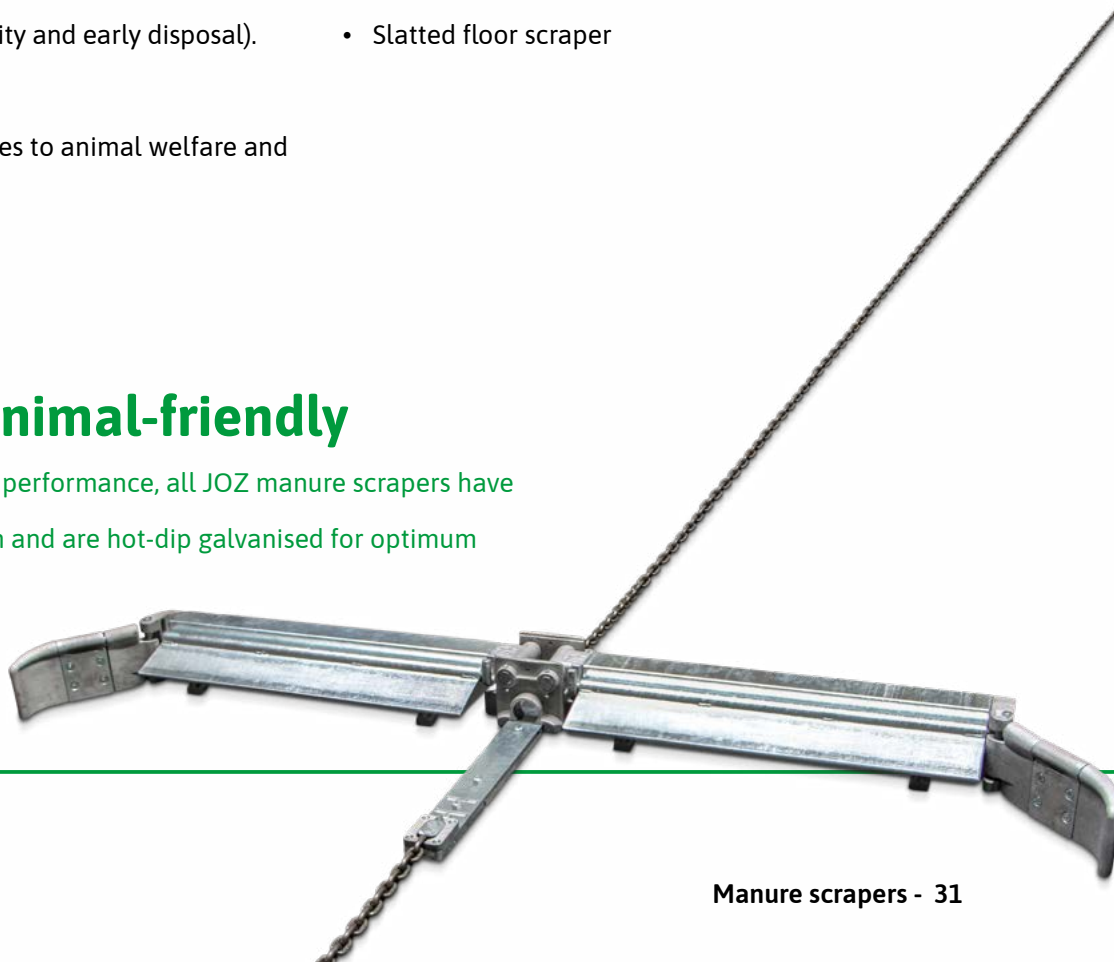
The type of floor impacts walkability and, as such, animal comfort and quiet in the barn. Environmental requirements and legislation mean farmers are not always free to choose a particular floor. Fortunately, JOZ has a suitable and proven manure scraper system for every combination of floor type, cubicle bedding and animal.

JOZ supplies the following types of scraper:

- Combi scraper
- Multi-scraper
- Delta scraper
- Flex scraper
- Slatted floor scraper

Robust and animal-friendly

In addition to their optimal performance, all JOZ manure scrapers have a very animal-friendly finish and are hot-dip galvanised for optimum corrosion protection.



Combi scraper

The JOZ combi scraper was developed for barns with solid or semi-solid floors. These can be flat floors with deposit points at fixed distances, or sloping floors where the manure drains to the middle or outside. The drive-over combi scraper was specially designed for barns where vehicles are used.

- Single-action drive-over combi scraper
- Single-action combi scraper with retractable pulling bar
- Dual-action combi scraper with end deposit
- Single-action combi scraper
- Combi scraper HCI W5 floor
- JOZ Chicken manure scraper

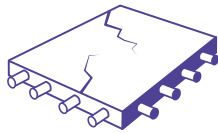
JOZ supplies different types of combi scrapers, depending on the barn situation:

- Single-action combi scraper



The JOZ combi scraper is robust and compact, and delivers optimum scraping results!

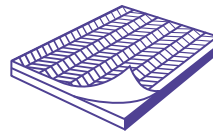
Dual-action combi scraper with end deposit.
(see page 34)



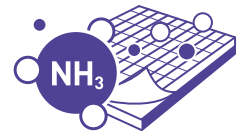
Solid concrete floor



Slatted floor



Rubber floor



Low-emission floor

Single-action combi scraper

This scraper requires little room to park and opens very quickly at the beginning of the alley. The principle of the combi scraper is that it has main wings on each side of the central pulling bar, which are in the vertical position during scraping and are raised when the scraper returns. This way, the combi scraper can return through the manure while carrying along virtually no manure. The two side wings scrape the side walls perfectly clean along the entire width, even if the walls are not perfectly straight.

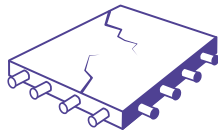
Characteristics:

- Equal or unequal alley length with chain
- Suitable for flat floors and UNP guides
- Version with or without rubber on the main and side wings
- Can be used with chain, cable or rope drive units
- Animal-friendly construction and tail protector
- Normal amount of cubicle bedding, little to no straw

The scraper is suitable for alleys from 135 cm to 600 cm wide.*

*alley widths over 600 cm in consultation with JOZ.

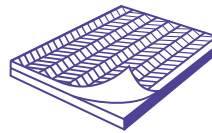




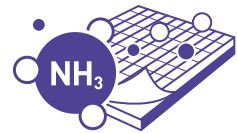
Solid concrete floor



Slatted floor



Rubber floor



Low-emission floor

Single-action drive-over combi scraper

The single-action combi scraper is also available in a drive-over version. The scraper requires little room to park and opens very quickly at the beginning of the alley.

Characteristics:

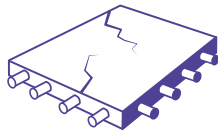
- Equal or unequal alley length with chain
- Suitable for flat floors and UNP guides
- Version with or without rubber on the main and side wings

- Manual folding of the frame
- Supplied with hook for removing locking pins and folding the frame in or out
- Can be used with chain, cable or rope drive units
- Normal amount of cubicle bedding, little to no straw

Please note: no side wing limiter possible.

**Suitable for alley widths
from 135 cm to 400 cm.**

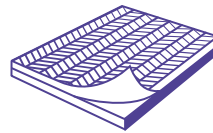




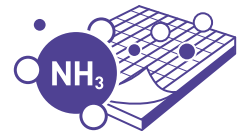
Solid concrete floor



Slatted floor



Rubber floor



Low-emission floor

Single-action combi scraper with retractable pulling bar

If you want a manure alley to be as clean as possible, or if there is little space at the deposit point, you can opt for a single-action combi scraper with a retractable pulling bar. This manure scraper clears the entire manure alley and the long pulling bar retracts when approaching the deposit point, so every part of the barn is covered. A unique feature of this scraper in the unequal alley version is the fact that it can be turned off manually, while the other scraper of the same system continues to run.

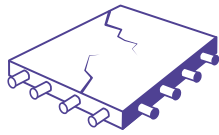
**Suitable for alley widths
from 135 cm to 440 cm.**

Characteristics:

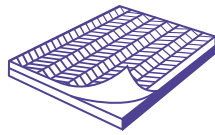
- Equal or unequal alley length with chain
- Suitable for flat floors and UNP guides
- Version with or without rubber on the main and side wings
- Little parking space required
- Tail protector
- Scraper opens very quickly at the beginning of the alley
- Can be used with chain, cable or rope drive units
- Animal-friendly construction and tail protector
- Normal amount of cubicle bedding, little to no straw

Note: no bottom connection possible and not suitable for lifting hatches.





Solid concrete floor



Rubber floor



Low-emission floor

Dual-action combi scraper with end deposit

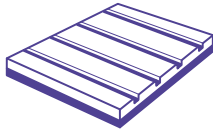
Dual-action combi scrapers with end deposit are used in barns that have a deposit point at the beginning and end of the manure alley. This scraper cleans the alley on both the outward and the return pass. This scraper has a standard side wing limiter.

Characteristics:

- Equal or unequal alley length with chain
- Suitable for flat floors and UNP guides
- Version with or without rubber on the main and side wings
- Little parking space required
- Scrapes the entire alley width in a short distance
- Can be used with chain, cable or rope drive units
- Animal-friendly construction and tail protector
- Normal amount of cubicle bedding, little to no straw

**Suitable for alley widths
from 135 cm to 440 cm.**





Rubber/concrete slatted
floor

Comb scraper

The comb scraper is a type of combi scraper used for slatted floors. These can be either concrete or rubber floors. A comb scraper is only available as a single-action version and is suitable for chain, cable or rope drive units. Normal quantity of cubicle bedding, straw only with single pass.

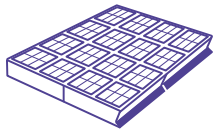
- Adjustable side wing limiter as standard
- No extended side wings possible
- Distance between first groove and cubicle edge depends on the type of floor
- Animal-friendly design with tail protector
- Normal amount of cubicle bedding, little to no straw

Characteristics:

- Equal or unequal alley length with chain
- Only suitable for UNP guides
- Always fitted with rubber on the main and side wings
- Little parking space required
- Heavy duty

**Suitable for alley widths
from 135 cm to 380 cm.**





HCl W5 element floor

Combi scraper HCl W5 floor

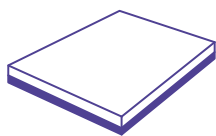
The HCl W5 floor is a solid, sloping floor with smooth, sloping urine channels. By allowing the urine channel to drain separately from the slab, the liquid and solid fractions are separated on the slab. JOZ has designed a unique scraper for the HCl W5 floor. The scraper is suitable for chain, cable or rope drive units. The scraper is also capable of handling a normal quantity of cubicle bedding and little or no straw.

Characteristics:

- Equal or unequal alley length with chain
- Always fitted with rubber on the main and side wings
- Hinged arms that follow the slope
- Main frame bent forward
- Suitable for lifting hatch
- Side wing limiter
- Little parking space required
- Animal-friendly construction and tail protector

**Suitable for alley widths of
250, 300, 350 and 400 cm.**





Flat floor

JOZ chicken manure scraper

JOZ manufactures manure scrapers for all forms of animal husbandry, including poultry farming. The JOZ chicken manure scraper is a type of combi scraper with extra heavy main wings that uses guide rollers next to the main frame. This scraper aggressively cleans the floor using a spoiler, which always produces a perfect result, even with extremely dry manure. These scrapers are made from manganese steel in order to minimise wear and tear.

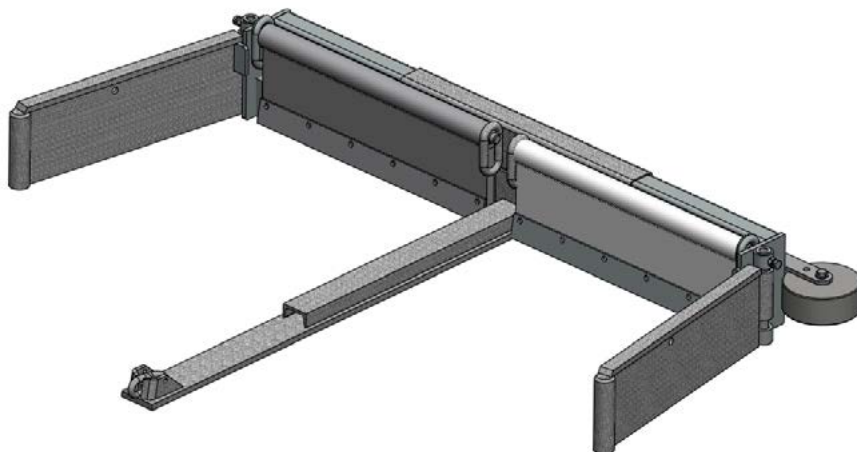
Characteristics:

- Heavy-duty main wings
- Manganese steel scrapers
- Side wing limiter
- Guide rollers next to main frame
- Reinforced main frame
- Secure fastening of chain to pulling bar

Can be used for chickens, ducks and fur animals

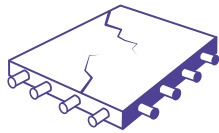
- Suitable for chain, cable and rope drive units

**Suitable for alley widths
from 135 cm to 320 cm.**





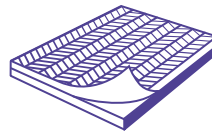




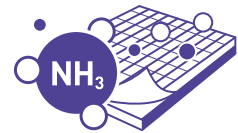
Solid concrete floor



Slatted floor



Rubber floor



Low-emission floor

Multi-scraper

More than 60 years of experience in manure removal technology and the drive to make the best products have resulted in the JOZ multi-scraper. JOZ is proud of this achievement, because the multi-scraper, which features modular construction, adaptability, hard-wearing components and a rounded, animal-friendly design, is the leader in its class.

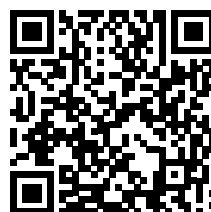
The multi-scraper is built from various cast steel parts. This makes the scraper more wear-resistant than structural steel. The modular design means that all wearing parts can be easily replaced, allowing the manure scraper to enjoy an unlimited service life with minimal maintenance costs. All wearing parts are equipped with visual wear indicators so that they can be replaced at the right time before the scraper's performance decreases.

The animal-friendly curves around the entire scraper, the two special main frame hinged arms (which allow the frame to be bent forward at will even after the scraper is first used), the swing capacity of the scraper and the configurable pulling bar make this multi-scraper a unique high-quality product with an optimal and unmatched scraping result.

The advantage of moving the scraper's main arms forward is that, when a lot of (dry) bedding is used, the manure and bedding will glide to the middle of the scraper. As a result, manure will never run into in the cubicles and the scraper pulls more evenly and lightly. This ensures maximum hygiene and lower maintenance costs.

The advantage of the hinged arms is that the scraper follows the floor optimally and makes it perfectly clean. The multi-scraper is therefore ideal for floors that slope towards the centre.

**Suitable for alley widths
from 135 cm to 460 cm.**



**Scan the QR code
and watch the
YouTube video of
our multi-scraper**

Characteristics of the multi-scraper

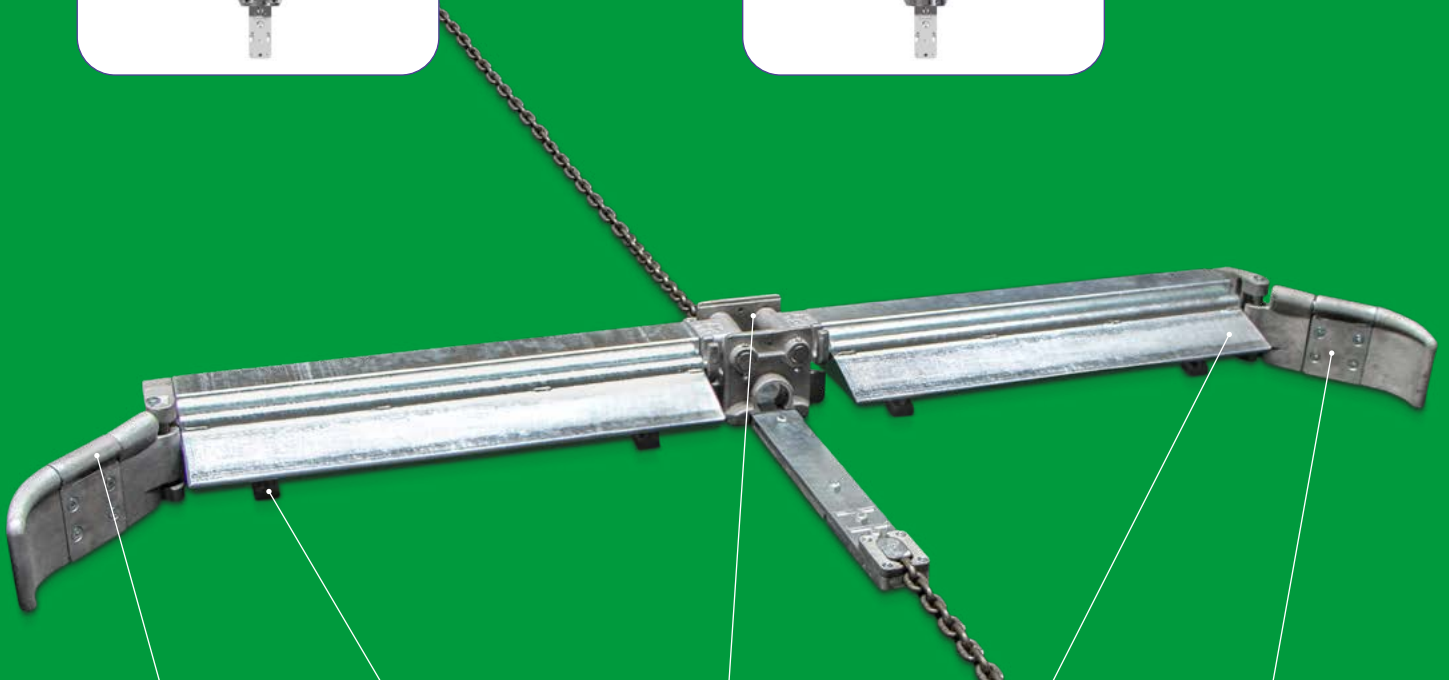
- ✓ Most animal-friendly design
- ✓ Equal or unequal alley length with chain
- ✓ Suitable for flat floors and UNP guides
- ✓ Available with or without rubber on the main and side wings
- ✓ Little parking space required
- ✓ Configurable
- ✓ Swinging power
- ✓ Wear indicators
- ✓ The main frame can be angled straight or forward at any time as desired
- ✓ Scraper opens rapidly at the start of the alley
- ✓ Suitable for chain, cable or rope drives
- ✓ Normal amount of cubicle bedding, little to no straw



Mainframe angled forward



Mainframe straight



Animal-friendly finish



Wear indicators on feet instead of main frame



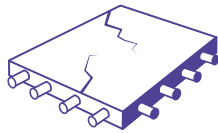
Hinged arms



Side wing limiter



Configurable side wings



Solid concrete floor

Delta scraper

In the case of a barn with cubicles or a sloped barn in combination with the use of a lot of long straw, the delta scraper is the most suitable. The straw is guided to the middle of the scraper, along with the manure, so that the manure does not enter the lying area and the scraper pulls evenly and lightly. This means cows do not have to walk through the manure when they step over the scraper. When the delta scraper returns, the arms fold together so that a minimal amount of straw and manure is carried along. The scraper can be driven over in folded-in position. The guide profile in the centre of the floor keeps the scraper stable.

The delta scraper pulls the solid manure to the end of the manure alley. If desired, the manure can be temporarily stored on a manure plate or transported to a manure heap completely automatically, using a side discharge system. The MSC control panel allows phased deposits. Depending on the roughness of the floor, the scraper needs about 1.5 times the width of the manure alley to open completely. This should be taken into account when designing the barn. JOZ offers a folding scraper with a quick opener, so that the folding scraper is opened mechanically and less space is needed (see page 44).



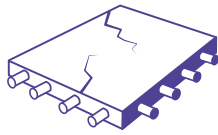
The delta scraper is also the perfect solution for barn alleys with varying width. The scraper adapts effortlessly without leaving any manure behind.

Characteristics:

- Equal or unequal alley length with chain
- Only suitable for manure alleys with UNP guides
- Low-maintenance
- Can be driven over
- Can be used in barns with a sloping floor
- Frame equipped with spoiler, which exerts extra pressure on the floor (resulting in a cleaner floor)
- Needs 1.5 times the alley width to open the scraper arms
- Can be used with chain and cable drive units
- Strong, animal-friendly construction
- Ideal for barns with straw bedding

**Suitable for alley widths
from 135 cm to 440 cm.**





Solid concrete floor

HDX delta scraper

The delta scraper is the most robust scraper in the JOZ range. We developed it for barns with sand bedding and other barns with demanding conditions, where normal manure scrapers wear out faster. The HDX delta scraper is suitable for heavy-duty use.

This delta scraper is the most wear-resistant on the market. The HDX delta scraper can be supplied in full and semi-delta versions; the latter is also known as a single-arm delta scraper. Page 56 contains more information about JOZ side discharge systems.

The HDX delta scraper is part of JOZ's Heavy-Duty Line and is always sold in combination with the hardened Corner Roll Plus; a corner roll with reinforced components that keeps the manure scraper system running better. All wearing parts are replaceable, giving the system a long service life.

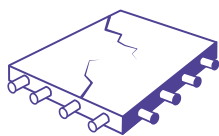
Characteristics:

- Equal or unequal alley length with chain
- Only suitable for manure alleys with UNP guides
- Low-maintenance
- Can be driven over

- Can be used in barns with a sloping floor
- Frame equipped with spoiler, which exerts extra pressure on the floor (resulting in a cleaner floor)
- Needs 1.5 times the alley width to open
- Can be used with chain and cable installations
- Strong, animal-friendly construction
- Ideal for barns with sand bedding or straw bedding
- Delta scraper reinforced with extra wear-resistant steel
- Quick opener cannot be used

**Suitable for alley widths
from 135 cm to 440 cm.**





Solid concrete floor

Quick opener for the delta scraper

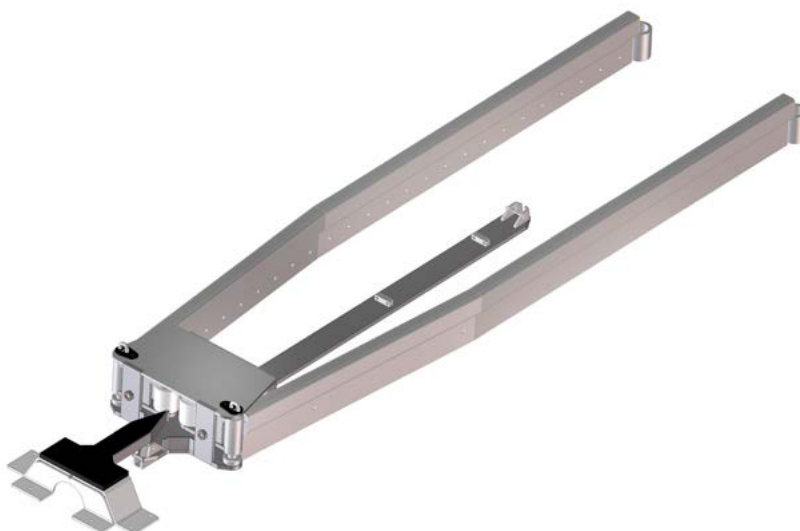
A delta scraper needs about 1.5 times the alley width to fully open. That means that the first 6 metres in a 4 m wide alley are only partially scraped. The JOZ quick opener offers a solution here. The quick opener is a steel wedge fitted with rubber that is mounted in front of the corner roll at the beginning of the manure alley. The delta scraper has rollers fitted on the inside of the arms, next to the hinge point. The wedge presses against the rollers, and forces the scraper to open. In JOZ's MSC control panel there is a special setting that temporarily gives the slide extra force when opening, but while scraping there remains a perfect (sensitive) setting for cow protection. Note that the arms open quickly, so there can be no cows in that section. This area must be fenced off.

Advantages:

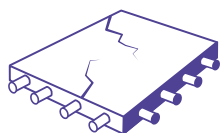
- Minimum space required in the manure alley before the delta scraper is fully opened
- The entire manure alley is scraped; a large parking space is not needed

Characteristics:

- Only to be used in a zone fenced off from people and animals
- Can only be used with a JOZ delta scraper designed for the purpose
- Can only be used with the JOZ MSC control panel
- Cannot be used with deposit on a flat manure plate
- Cannot be used with unequal alley lengths



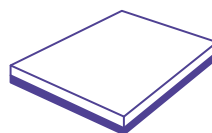




Solid concrete floor



Low-emission floor



Flat floor

Flex scraper

JOZ has extensive experience with manure scrapers in barns with sand bedding. The main challenge in barns with sand bedding in the cubicles is limiting wear and tear, as sand is highly aggressive. This experience has resulted in the flex scraper. The flex scraper was specially developed for barns with sand bedding, but can also be used for all other cubicle bedding.

The flex scraper has special 4 cm thick wear-resistant rubber on the entire underside, making it very easy to maintain. The entire frame is at the top of the scraper, and there is no contact between the steel and the floor. Thanks to the narrow main frame, the flex scraper opens rapidly and both arms fold double on the return pass. This means that during the return pass it is possible to drive over the flex scraper and it allows cows to pass the scraper without having to negotiate obstacles. The flex scraper has a kink in the main frame as standard, which prevents manure and bedding from ending

up in the cubicles. The manure and bedding slide towards the middle of the scraper, so the flex scraper glides more evenly and easily.

Characteristics:

- Equal or unequal alley length with chain
- Suitable for flat floors and UNP profile
- Heavy-duty, galvanised frame on top of scraper
- Low-maintenance
- Can be driven over
- Opens faster than folding scraper
- Suitable for chain, cable and rope drive units
- Strong, animal-friendly construction
- Ideal for barns with sand bedding
- Suitable for barns with up to 1.5 kg straw per cow per day

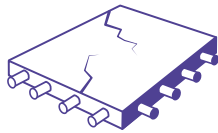
**Suitable for alley widths
from 135 cm to 400 cm.**



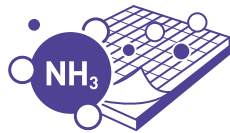
Opened in working position



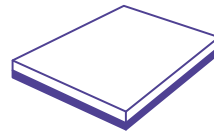
Closed in return position



Solid concrete floor



Low-emission floor



Flat floor

Flex scraper with E-rubber

The flex scraper with E-rubber is a new variant of the flex scraper, which ensures a clean and dry floor even in difficult conditions. This flex scraper is fitted with E-rubber over the entire underside of the scraper, which, like the standard flex scraper, makes it very easy to maintain. No steel is in contact with the floor. E-rubber has been specially developed for sand barns and barns with more demanding conditions. It can also be mounted on existing systems.

The flex scraper with E-rubber is very animal-friendly, and can be used on asphalt floors and in places that are hard to reach. The flex scraper with E-rubber also has a narrow main frame to allow it to open quickly. Both arms fold double when the scraper returns. This means it is possible to drive over the flex scraper with E-rubber, and it allows cows to pass the scraper on its return without having to negotiate obstacles. The kink in the main frame keeps manure and bedding out of the cubicles.

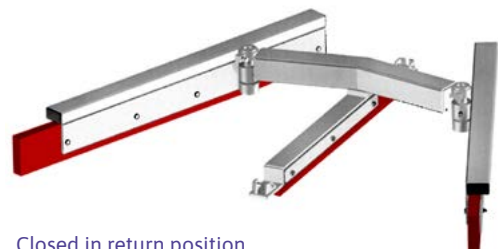
Characteristics:

- Equal or unequal alley length with chain
- Can be used on flat floors with UNP guides
- Heavy-duty, galvanised frame on top of scraper
- Low-maintenance
- Opens faster than a delta scraper
- Suitable for chain, cable and rope drive units
- Strong, animal-friendly construction
- Ideal for barns with sand bedding and more demanding conditions
- Suitable for barns with up to 1.5 kg straw per cow per day

**Suitable for alley widths
from 135 cm to 400 cm.**



Opened in working position



Closed in return position

Slatted floor scraper

The slatted floor scraper is mainly used on slatted floors and on some low-emission floors. The slatted floor scrapers are suitable for cable, rope and chain drive units.

No lateral guides

An important advantage of the JOZ slatted floor scraper is that no lateral guides are needed. Special rotors on the sides of the scraper ensure that obstacles such as standpipes by the feeding fence, water mains and tails can be circumvented without problems.

Even if the manure alleys are not all the same length, a JOZ slatted floor scraper can be used with a chain, cable or rope without problems.

Automatically adjustable

The scraper is pulled across the floor using chain and cable or rope and is powered by a noiseless electric motor. The speed is 4.5 m/min. With the latest control panel from JOZ, the scraper can be fully controlled entirely automatically.



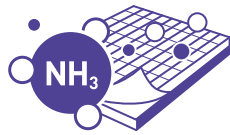
JOZ supplies two types of slatted floor scraper, depending on the barn situation for which it is made

Advantages

- ✓ Animal-friendly finish
- ✓ Optional: adjustable pulling bar
- ✓ Better general hygiene
- ✓ Less manure on the slatted floor and behind the boxes, and therefore fewer hoof problems and cleaner cubicles



Slatted floor



Low-emission floor

Rubberised slatted floor scraper with rotor

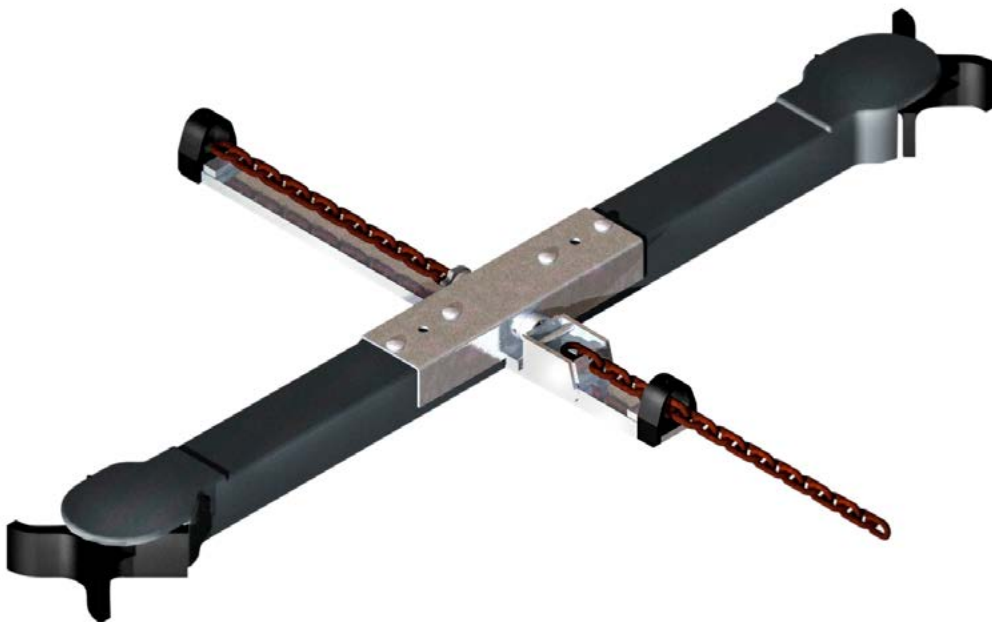
Characteristics:

- Strong, animal-friendly construction
- Available in a reinforced version as standard for wide alleys and large amounts of cubicle bedding
- Rotors guarantee clean cubicle walls and make steel guides in the crossing unnecessary
- Rubber guide eye for rope/cable/chain
- 2 rubber strips under the scraper guarantee very thorough cleaning
- Unequal alley for chain, otherwise 2 scrapers per (longest) alley
- Standard 220-cm pulling bar for additional stability
- Suitable for cable, rope or chain drive units
- Normal amount of cubicle bedding

Option:

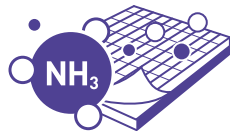
- Pulling bar from the centre

Suitable for alley widths from 135 cm to 420 cm.





Rubber floor



Low-emission floor

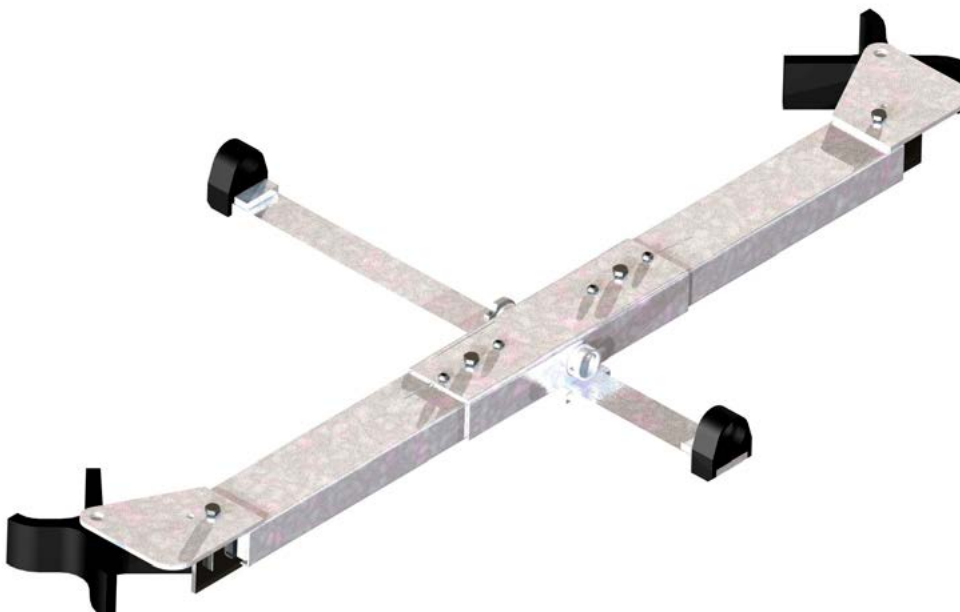
Galvanised slatted floor scraper with rotor

Characteristics:

- Suitable for wide alleys and large quantities of cubicle bedding
- Rotors guarantee clean cubicle walls and make steel guides in the crossing unnecessary
- Height of scraper rubber adjustable on both sides
- Rubber guide eye for rope/cable/chain
- Cow-friendly finish
- Unequal alley for chain, otherwise 2 scrapers per (longest) alley
- Standard 220-cm pulling bar for additional stability
- Suitable for cable, rope or chain drive units

Option: pulling bar from the centre/green flag floor/meadow floor.

**Suitable for alley widths
from 135 cm to 460 cm.**







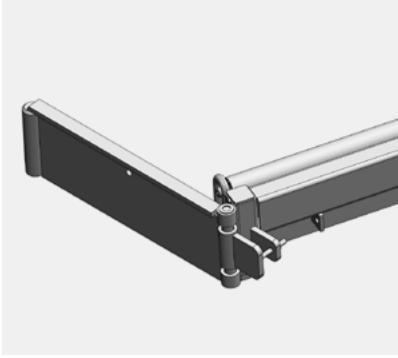
Manure scrapers

Options

Every situation is unique. That's why we have various options to make the manure scraper work best for your barn.

Advantages

- ✓ Cow-friendly corner rollers
- ✓ Long service life
- ✓ JOZ is here to help

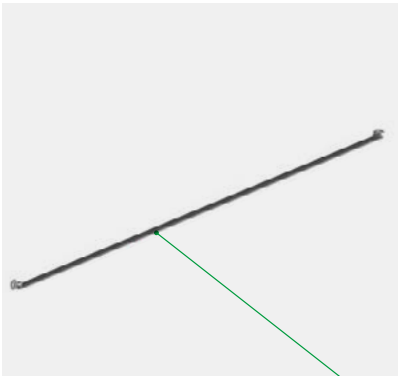


Adjustable side wing limiter

The opening of the side wing of a manure scraper can be limited with a bolt adjustment.

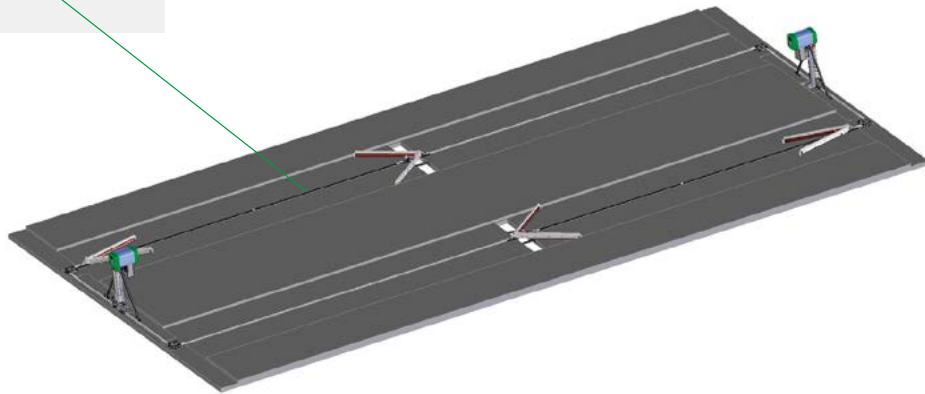
These options are applied:

- With flat-floor combi scrapers
- With UNP combi scrapers, which do not always have lateral guides
- With UNP combi scrapers, when prefab stall slabs are used



Flat steel drawbar

The drawbar can be used between two manure scrapers as a cheaper alternative to a chain. The drawbar can be attached to the pulling bars of the manure scrapers with welding links.



Sloping manure alley

Some floors slope towards the middle of the manure alley. If there is a fixed slope to the floor, the multi-scraper is the ideal solution (see page 42). The swing capacity ensures that the manure scraper leaves the manure alley as clean as possible.



Guide irons on side wings

If the level at the crossing is the same as the manure alley and there is no guide edge, we recommended mounting a guide iron so that the scraper is correctly guided to the edge of the cubicle.

Application:

- For manure alleys without guide edge
- Sealed floors with U-profile
- Slatted floors
- The manure scraper must have a side wing limiter



Bottom connection pulling bar

A bottom connection of the pulling bar is a very animal-friendly solution. The bottom connection can be made at the front or rear of the pulling bar. UNP guides are required.

Features of bottom connection:

- Chain/cable/rope remains in the recess in the floor
- Shortening the chain/cable requires more effort
- Recess in floor at least 30 mm deep
- Less pressure on pulling bar!
- Corner roll/drive unit must be recessed



Application:

- Multi-scrappers, combi scrapers and flex scrapers
- Only possible for scrapers with same alley length
- MDV 9.1





Rapid manure removal

Side discharge systems

As well as manure scrapers, JOZ has developed scraper systems that guide the manure discharge further along in the discharge process.

Advantages

- ✓ Solid construction
- ✓ Phased discharge
- ✓ Can be applied with large amounts of straw and/or long straw

Single-arm version

The JOZ folding scraper also comes in a single-arm version. This is being increasingly used for side discharge systems, but also for grids in pig sties. We also make a special version for barns with sand bedding; the single-arm HDX delta scraper.



The rapid removal
of manure ensures
optimal barn
hygiene



Side discharge systems

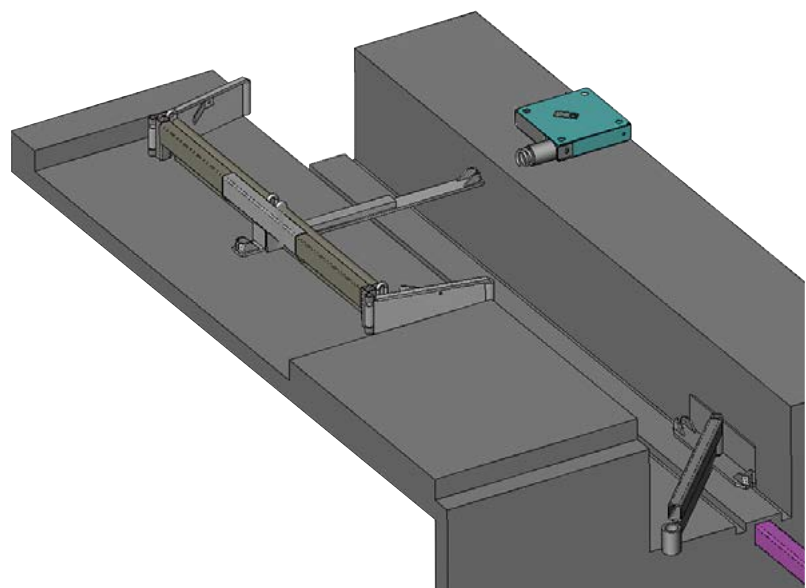
Manure can be deposited on an open deposit (pit), turning chain system or a second single-armed delta scraper. The scraping frequency depends on the frequency of supply. If a JOZ supplying system is used, optimum phased deposit can be set. If a lot of manure has to be removed in a short time, several scrapers have to be placed at the deposit point.

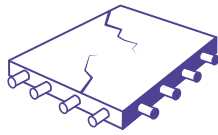
If sand is used as bedding in the barn, it is best to use an HDX version of the single-arm delta scraper. Several single-arm delta scrapers can be used per side discharge system. At least one single-arm delta scraper should be used every 15 metres. Instead of chain, drawbars can be placed between the scrapers.

For optimal performance of the single-arm folding scraper, JOZ must be closely involved in the concrete drawings. A number of critical points that need to be taken into account are the location of the drive unit, return side of the chain, and whether the return-side chain needs to be supported. The pulling bar, drive chain and drive unit must also be placed opposite the exit side.

Advantages of the single-arm folding scraper

- ✓ Solid construction
- ✓ Easy to use
- ✓ Optimal scraping result
- ✓ Standard system components
- ✓ UNP and flat floor possible
- ✓ Suitable for long straw and sand
- ✓ Connection to other MSC possible





Solid concrete floor

Single-arm delta scraper

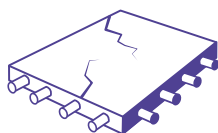
The single-arm delta scraper is highly suitable for barns where large amounts of straw and/or long straw are used. The solid construction is easy to use and produces perfect scraping results.

This scraper is made from high-quality materials and is very safe for cows, so it is ideal for barns with a side discharge system.

There is no distinction between a left or right version, because the scrapers are modular, making them very easy to use and user-friendly.

**Suitable for alley widths
from 70 cm to 135 cm.**





Solid concrete floor

Single-arm HDX delta scraper

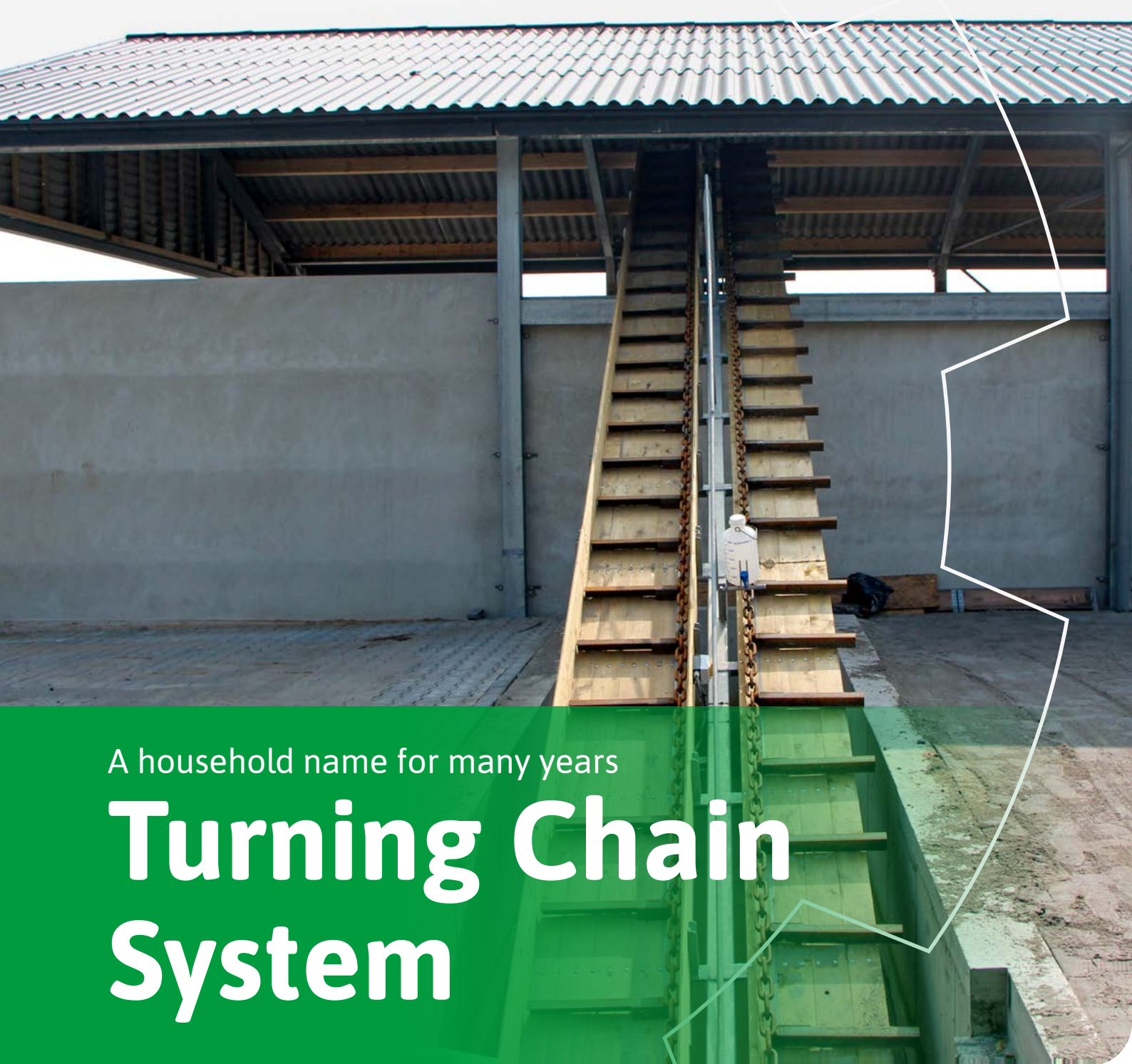
The single-arm HDX delta scraper can only be used for side discharge systems, installations under the floor or gratings. This scraper is supplied as standard with a bolt-on manure spoiler/elevation that increases the deposit capacity.

The scraper is available for a flat floor or with UNP guide. JOZ recommends always using UNP guides in barns with sand bedding.

**Suitable for alley widths
from 70 cm to 135 cm.**







A household name for many years

Turning Chain System

JOZ has been supplying the Turning Chain System for years and it is still widely used today.

Advantages

- ✓ A household name for over 70 years
- ✓ Simple and reliable



Simple and reliable

The Turning Chain System has been around for more than 70 years and is still widely used. This system is still in great demand, precisely because of its simplicity and reliability.

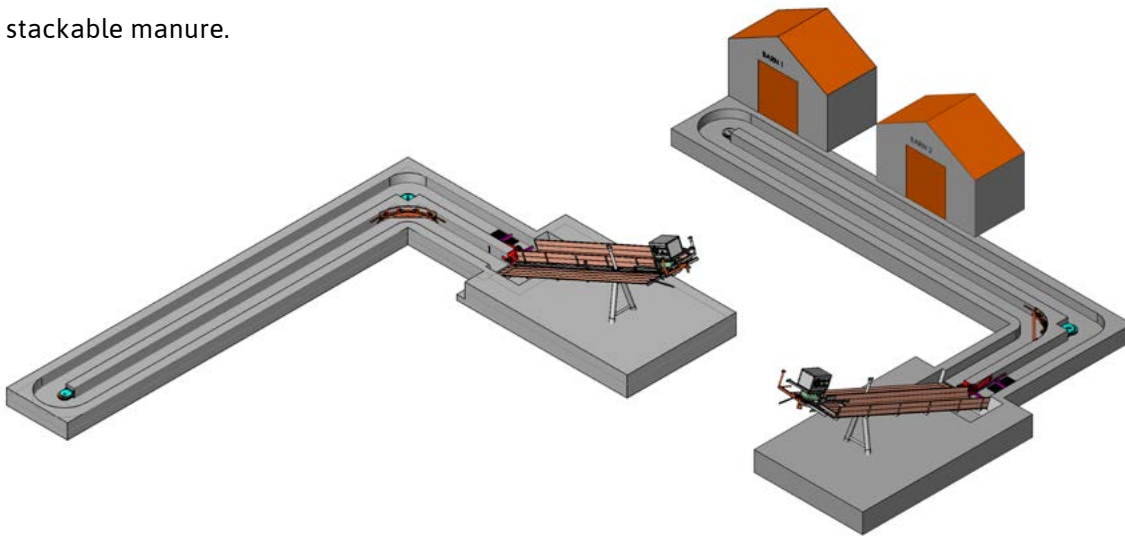
The system is frequently used in combination with JOZ manure scrapers. The solid manure is fed to the end of the manure alley by the manure scraper and deposited on the turning chain system. This system transports the manure quickly and reliably to the manure storage.

The turning chain system is used mainly in straw barns, sloping barns, pig sties and for stackable manure.

It is possible to connect it to the MSC control panel (automatic start/stop function). A conveyor belt is available as an option, in lengths ranging from 6 to 12 metres.

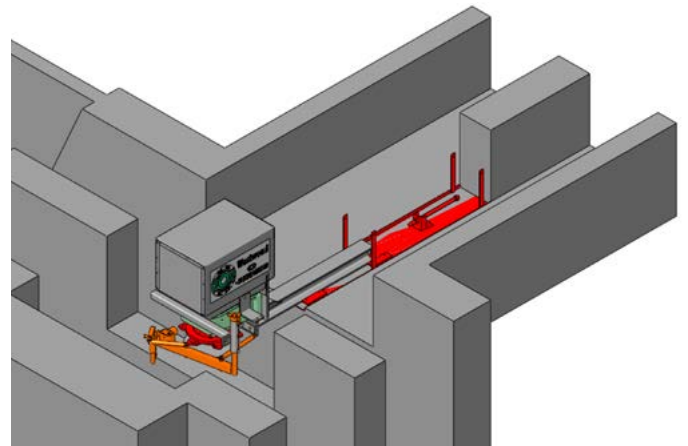
Advantages

- ✓ Solid construction
- ✓ Attractively priced
- ✓ Long life span as a result of the use of high-quality materials
- ✓ Continuously variable tensile force protection



Flat floor drive

A flat floor drive is also available. If the manure has to be deposited in a pit and not on a heap, a conveyor is not recommended. In this case, the drive unit is placed on a special anchor plate which is set in concrete.





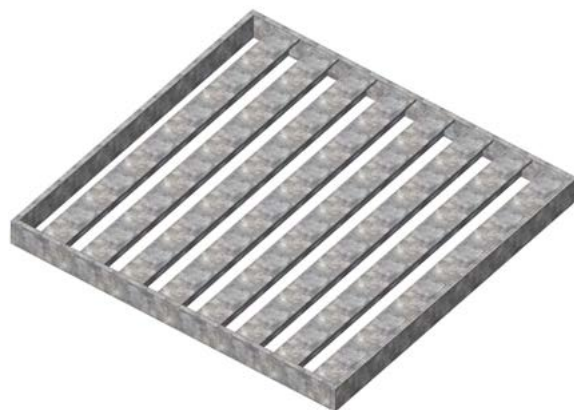
Manure removal

Deposit systems

There are several deposit options when removing manure from barn floors.

Advantages

- ✓ Clean floor, clean cows
- ✓ Customised
- ✓ JOZ is here to help



Squeaky clean

At JOZ, we believe it is important that the installation of our product results in clean and dry claws. That is the basis for good hoof health, which is our primary concern.

In slatted floors, manure is pushed through the slots by the scraper. In all solid and semi-solid floors as well as most low-emission floors, the manure scraper transports the manure to an open deposit point, guided by deposit irons. For solid and semi-solid floors we see additional options, such as diagonal steel grates and the JOZ lifting hatches.

It is important to have a deposit point at least every 60 to 80 metres. This limits the amount of manure in front of the scraper and means that the cows do not have to walk through a pool of manure. For stables with a longer length, deposits should take place in the middle of the barn.

Custom gratings and in-house manufactured

- ✔ Lifting hatches are manufactured according to customer needs and can be covered with animal-friendly rubber
- ✔ The letterbox deposit point is made in collaboration with JOZ

JOZ will gladly provide advice on this. There are lots of possibilities and your choices can affect the success of your business.

JOZ supplies the following types of deposit system:

- Steel discharge grates
- Lifting hatches
- Letterbox deposit



Steel discharge grates

Steel discharge grates are ideal for depositing thin manure. These steel discharge grates perform better than concrete grates as the open surface is larger. The grates are suitable for end deposit points as well as central deposit points. The maximum length is 120 cm.

Discharge grates are manufactured according to customer needs. Grates require more effort from the livestock farmer when the manure is thicker. The manure then does not fall completely through the grates.



Advantages

- ✓ Suitable for primary manure separation
- ✓ In straight or diagonal version
- ✓ Deposit point can be walked over by animals and people, and supports vehicles

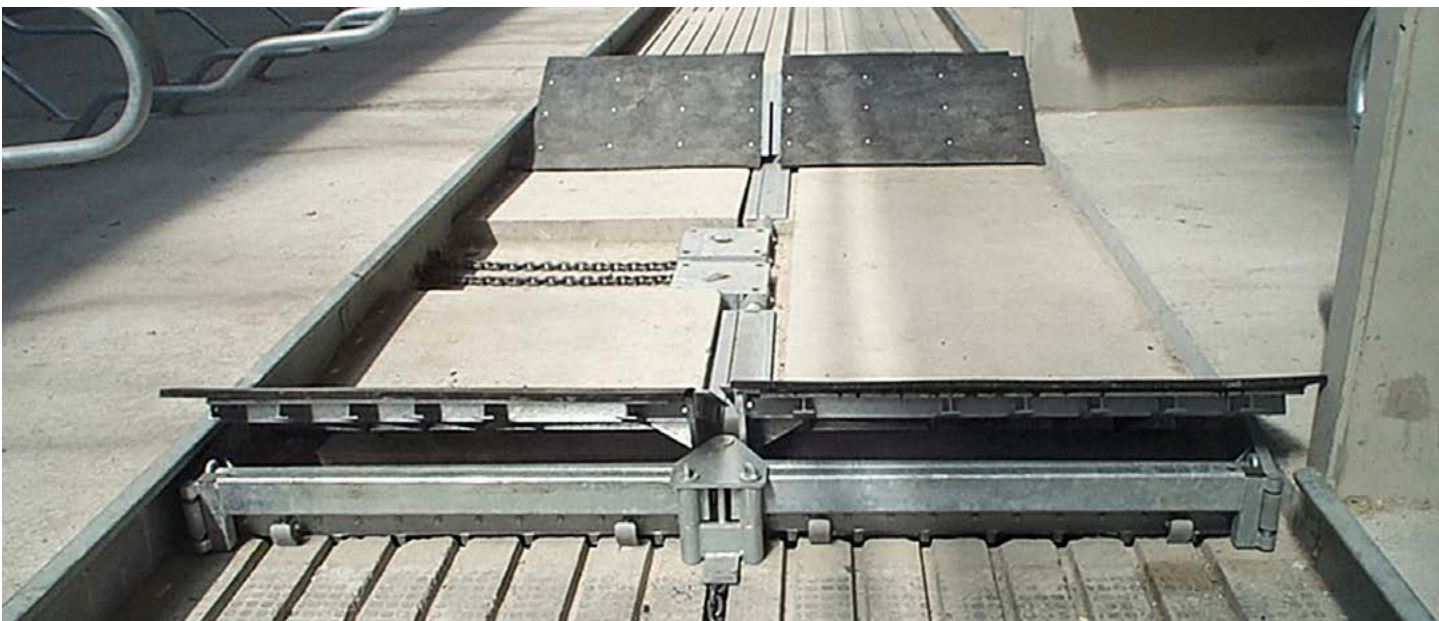
JOZ lifting hatches

The lifting hatch has been developed to shield the manure deposit point from humans, animals and traffic. The lifting hatches are automatically opened and closed by the manure scraper and controlled by the unique settings of the JOZ MSC control panel technology. This technology ensures, among other things, that the installation only increases in power when approaching the lifting hatch. This optimises cow safety in the manure alley.

Lifting hatches are manufactured according to customer needs and can be covered with animal-friendly rubber.

Characteristics:

- Walk- and drive-over deposit point
- Open deposit point, not for residual manure
- Type 650 or type 1000 (2 length versions)
- Adjustable sensitivity
- Can be used as standard with combi scrapers
- Also suitable for low-emission floors
- Animal-friendly in combination with rubber





JOZ letterbox deposit

An open deposit point is the only deposit point that performs reliably and under all (weather) conditions. The manure can be deposited quickly and the deposit point is at least 300 mm wide. JOZ advises an opening of 500 mm. With deep bedding, an open deposit point must be at least 450 mm wide. With open deposit points, it is important to consider the safety of animals and humans. A fence to prevent access is a prerequisite.

Safety is of paramount importance at JOZ. We therefore offer the option of manufacturing a cover for an open deposit point, also called a 'letterbox', which is designed in cooperation with JOZ.

For low-emission floors, JOZ always advises the use of an open deposit point with a letterbox or lifting hatch, and with deposit irons. The advantages of deposit irons are that the scraper always moves above the deposit point, leaving no manure in front

of the deposit point. The deposit irons are easy to install. Grates can be used for thin manure only, but this is only effective in exceptional circumstances. For example when using mattresses.



The advantages of JOZ deposit systems

- ✓ Customised
- ✓ Focus on safety for humans and animals
- ✓ Less manure residues
- ✓ Animal-friendly



Innovative collaboration:
MSC control panel
and the deposit system

Your JOZ dealer



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